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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,229	01/31/2005	Jonathan Hughes	IA/3-2233/PCT	8035

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EXAMINER	
HRUSKOCI, PETER A	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,229	HUGHES, JONATHAN	
	Examiner	Art Unit	
	/Peter A. Hruskoci/	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/10 and 11/28/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 4 "the acidic aqueous phase" and "the obtained aqueous phase" lack clear antecedent basis.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brink 4,384,897 in view of Moffett 6,132,625. Brink disclose (see col. 5 line 25 through col. 11 line 7) a process for separating an aqueous mixture including solid matter resulting from acid hydrolysis of a naturally occurring carbohydrate substrate, and a process for producing a fermentation product substantially as claimed. The claims differ from Brink by reciting the use of acid having a specific pKa and concentration, and the separation or removal of solid biological matter or solid matter from the acidic aqueous mixture or acidic aqueous phase, respectively. It is submitted that the sulfuric and hydrochloric acids disclosed in Brink would appear to have the recited pKa. It is further submitted that the pH of 2 to 3 utilized in the first stage hydrolyzer of Brink would appear to include an acid concentration patentably indistinguishable from the acid concentration recited in the instant claims. Moffett disclose (see col. 3 line 3 through col. 7 line 30) that it is known in the art to add a flocculating agents including polymers and anionic microgels, to aid in flocculating and separating biosolids present in aqueous streams including sugars and carbohydrates at a pH less than 7. It would have been obvious to one skilled in the art

to modify the process of Brink by utilizing the recited acid and separation or removal in view of the teachings of Moffett, to aid in separating solids from the aqueous liquid phase. The specific pKa and acid concentration utilized, amount of flocculating agent added, and separation or removal of the solid matter prior to neutralization, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific material hydrolyzed, flocculating agent utilized, and solid matter separated, and results desired, absent a sufficient showing of unexpected results. With regard to claims 7-11, it is submitted that Moffett as applied above, appears to disclose the use of the recited flocculating agents.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brink as above, and further in view of Foody et al. 6,090,595. The claim differs from Brink as applied above by reciting that the solid matter is subjected to a specific washing cycle. Foody et al. disclose (see col. 2 lines 33-46) that it is known in the art to wash separated or filtered solids from acid hydrolysis of cellulose, to aid in recovering glucose from the solids. It would have been obvious to one skilled in the art to modify Brink as applied above, by utilizing the recited washing cycle in view of the teachings of Foody et al., to aid in recovering sugars or glucose from the solids.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 7,455,997. Although the conflicting claims are not identical, they are not patentably distinct from each other because Although the conflicting claims are not identical, they are not patentably distinct from each other because the process steps recited in the instant claims appear to be fully encompassed by the claims of the patent.

Claims 1-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 10/523,230. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process steps recited in the instant claims appear to be fully encompassed by the claims of the copending applications.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant alleges that no flocculation is possible in Brink using the metallic ions until hydrous oxides are formed, and this requires neutralization, and the instant process excludes a neutralization step before the solids-liquid separation step by separation of solid biological matter in acidic medium. It is submitted that the separation of solid matter from an acidic mixture or phase in the instant process would appear to include separation at a pH of 6.9, which would be patentably indistinguishable from the neutralized mixture or phase disclosed in Brink.

It is further submitted that Moffett as applied above, was used to disclose the addition of flocculating agents and the separation of solids from an aqueous mixture at a pH less than 7. Furthermore, applicant has not presented sufficient comparative evidence with Brink to support the above allegation.

Applicant alleges that one skilled in the art would not consider the process of Foody, as the process is carried out enzymatically which differs from the acidic hydrolysis described by Brink. It is submitted that the hydrolysis of Foody appears to be carried out at an acidic pH of 5. Furthermore, applicant has not supplied sufficient factual evidence to support the above allegation.

Applicant argues that one skilled in the art would not arrive at the presently claimed process of separating the solid biological matter from the acidic aqueous mixture by the combination of Brink and Moffett. It is submitted that the teachings of Moffett as applied above, appear disclose that it is known in the art to use a combination of iron or aluminum salts, anionic colloids, and polymers, to aid in flocculating and separating biosolids in aqueous streams including carbohydrates or sugars, at a pH less than 7. It would have been obvious to one skilled in the art of liquid purification having the teachings of Brink and Moffet before him, to modify the process of Brink by the addition of the recited flocculating agents in view of the teachings of Moffett, to aid in separating solids from the aqueous liquid phase at a pH less than 7.

Claim 4 properly written to overcome the above 35 USC 112 rejection, and to include the use of flocculating agents selected from the group consisting of water soluble polymers, water-swellable polymers, and charged microparticulate material, and separation stages including mechanical means selected from the group consisting of a filter press, centrifuge, belt press,

horizontal belt filter, and pressure filter, to separated the solid matter as cake solids, would be allowable, upon the filing of proper terminal disclaimers.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Peter A. Hruskoci/ whose telephone number is (571) 272-1160. The examiner can normally be reached on Monday through Friday from 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter A. Hruskoci/
Primary Examiner
Art Unit 1797

1/9/09